

**A QUEUE MANAGEMENT MECHANISM FOR
PROPORTIONAL LOSS RATE DIFFERENTIATION**

CROSS-REFERENCE TO RELATED APPLICATIONS

This patent application is a Continuation-In-Part application of U.S. Patent Application

5 No. 09/455,445, filed on December ___, 1999, which is hereby incorporated by reference herein
in its entirety.

FIELD OF THE INVENTION

The present invention relates generally to strategic distribution of losses within a network
and, more particularly, to a technique for distributing losses based on service class when such
losses are unavoidable in a network.

BACKGROUND OF THE INVENTION

In the present state of the art, the transformation of the Internet into an important and
ubiquitous commercial infrastructure has not only created rapidly rising bandwidth demand but
also significantly changed consumer expectations in terms of performance, security, and
services. Consequently, service providers need to not only evolve their networks to higher and
higher speeds, but also need to plan for the introduction of new services and mechanisms so as to
address the varied requirements of different customers. At the same time service providers would
like to maximize the sharing of the costly backbone infrastructure in a manner that enables them
to control usage of network resources in accordance with service pricing and revenue potential.

20 The two trends of rapidly rising bandwidth demand and rising need for differentiation have
resulted in efforts to define mechanisms for service differentiation.